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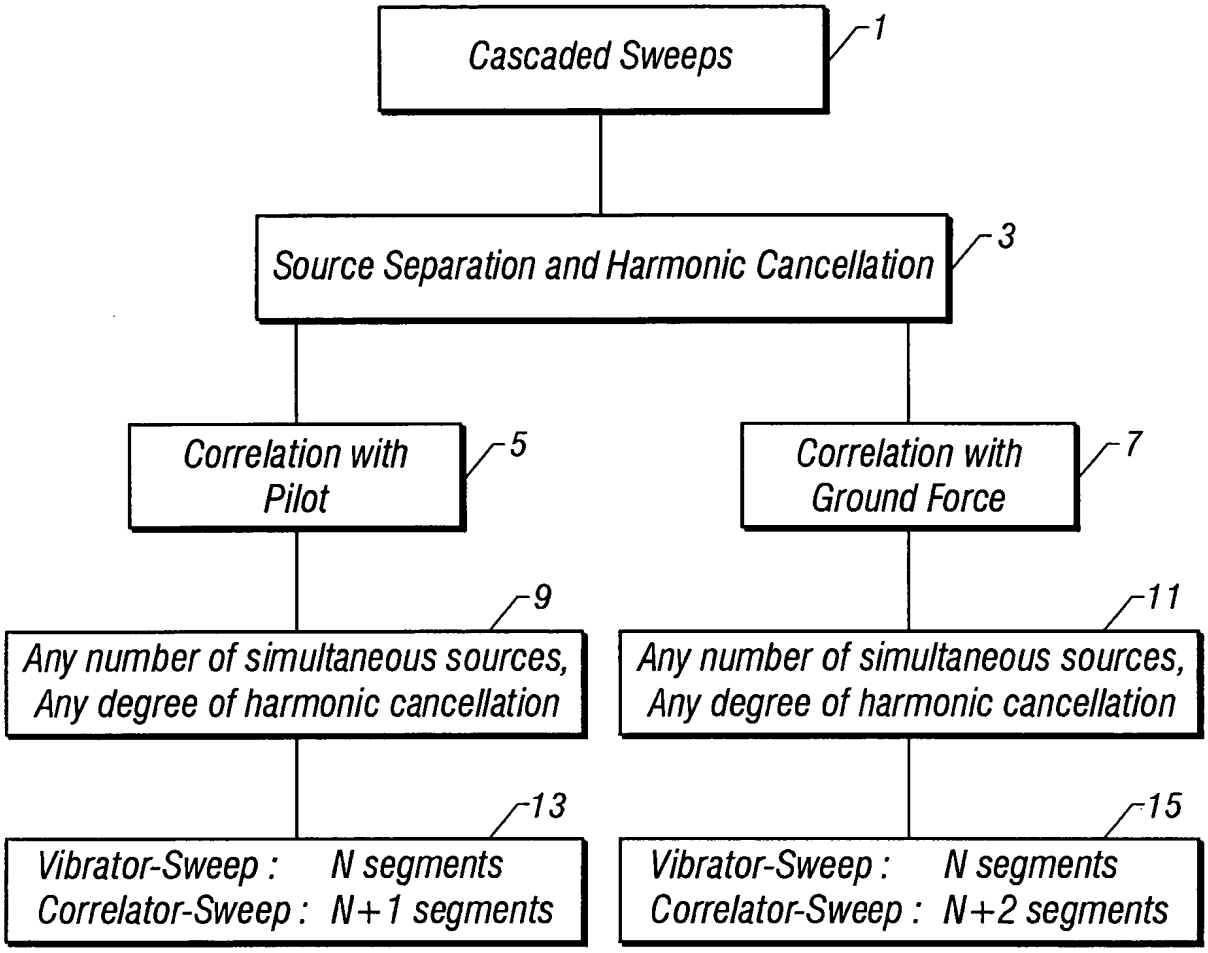
Cascaded Sweeps
1
Source Separation and Harmonic Cancellation
3
Correlation with Pilot
5
Correlation with Ground Force
7
Any number of simultaneous sources, Any degree of harmonic cancellation
9
Any number of simultaneous sources, Any degree of harmonic cancellation
11
Vibrator-Sweep : N segments
Correlator-Sweep : N+1 segments
13
Vibrator-Sweep : N segments
Correlator-Sweep : N+2 segments
15

FIG. 1

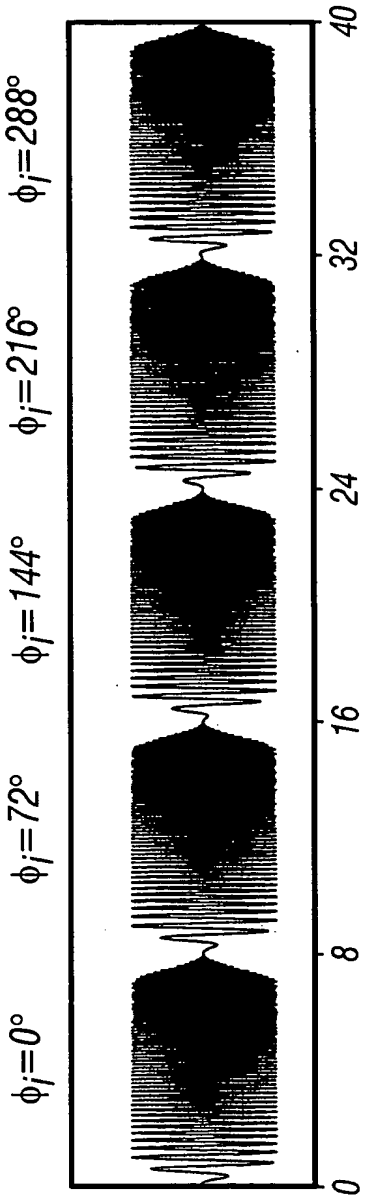

FIG. 2A

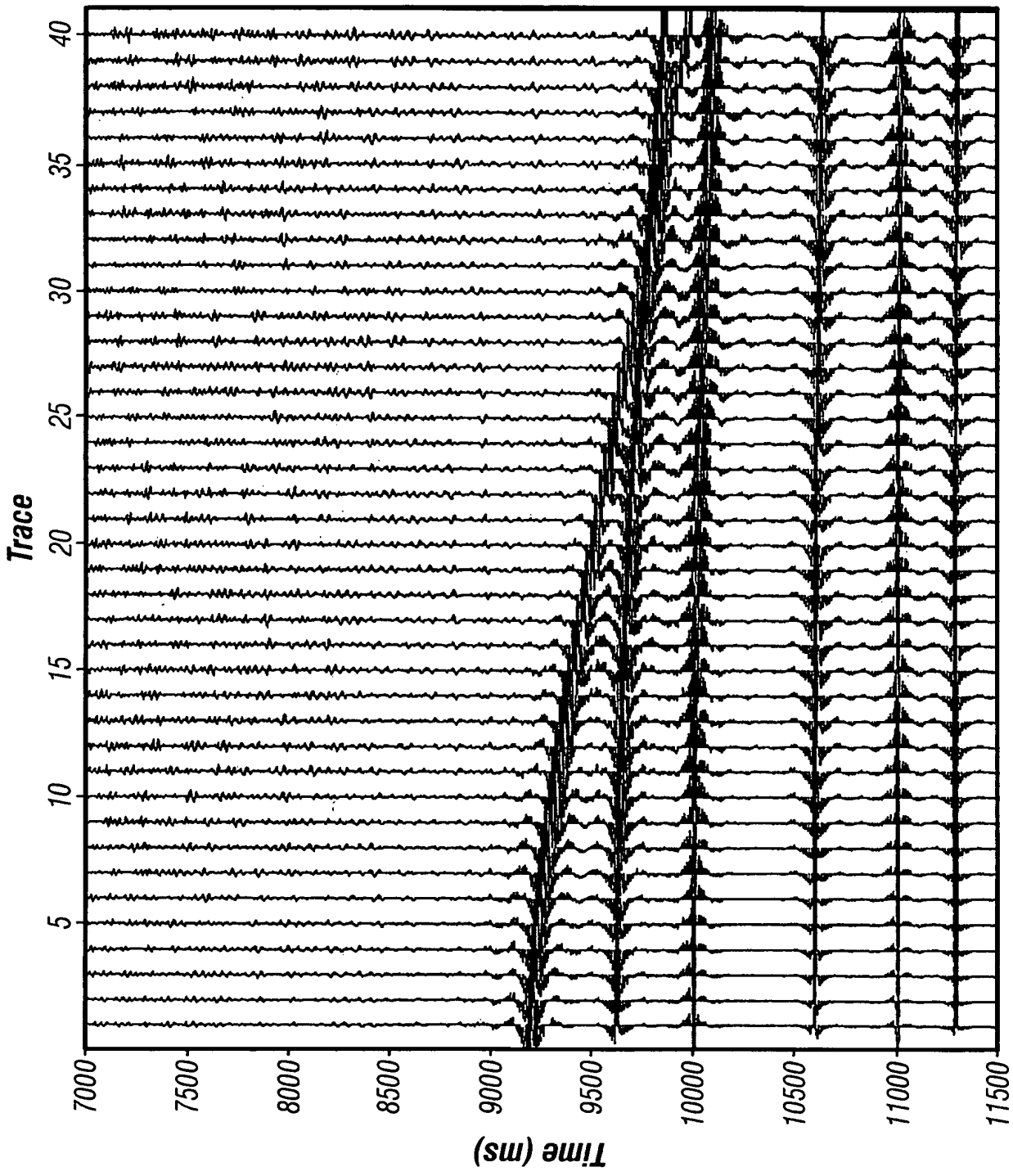
Trace
5
10
15
20
25
30
35
40
7000
7500
8000
8500
9000
9500
10000
10500
11000
11500
Time (ms)

FIG. 2B

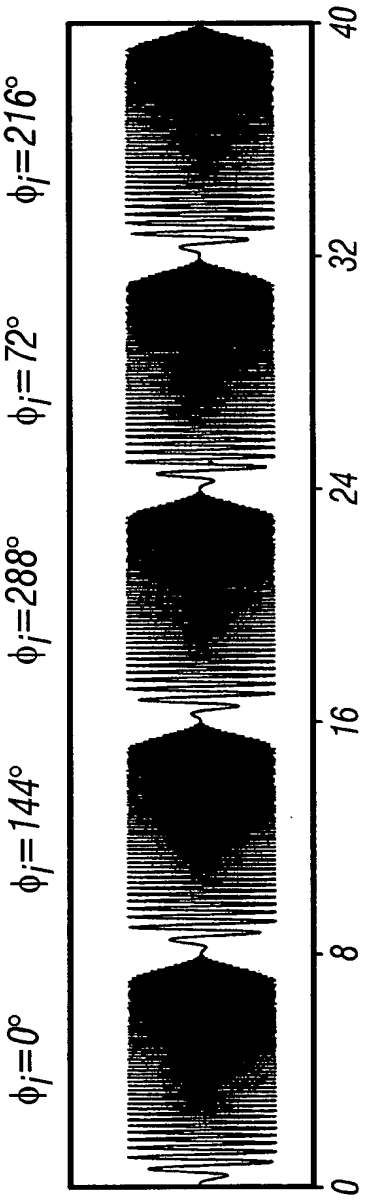

FIG. 3A

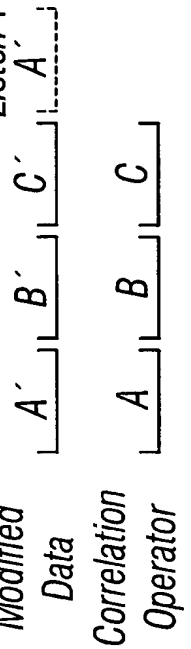

FIG. 3C

FIG. 3B

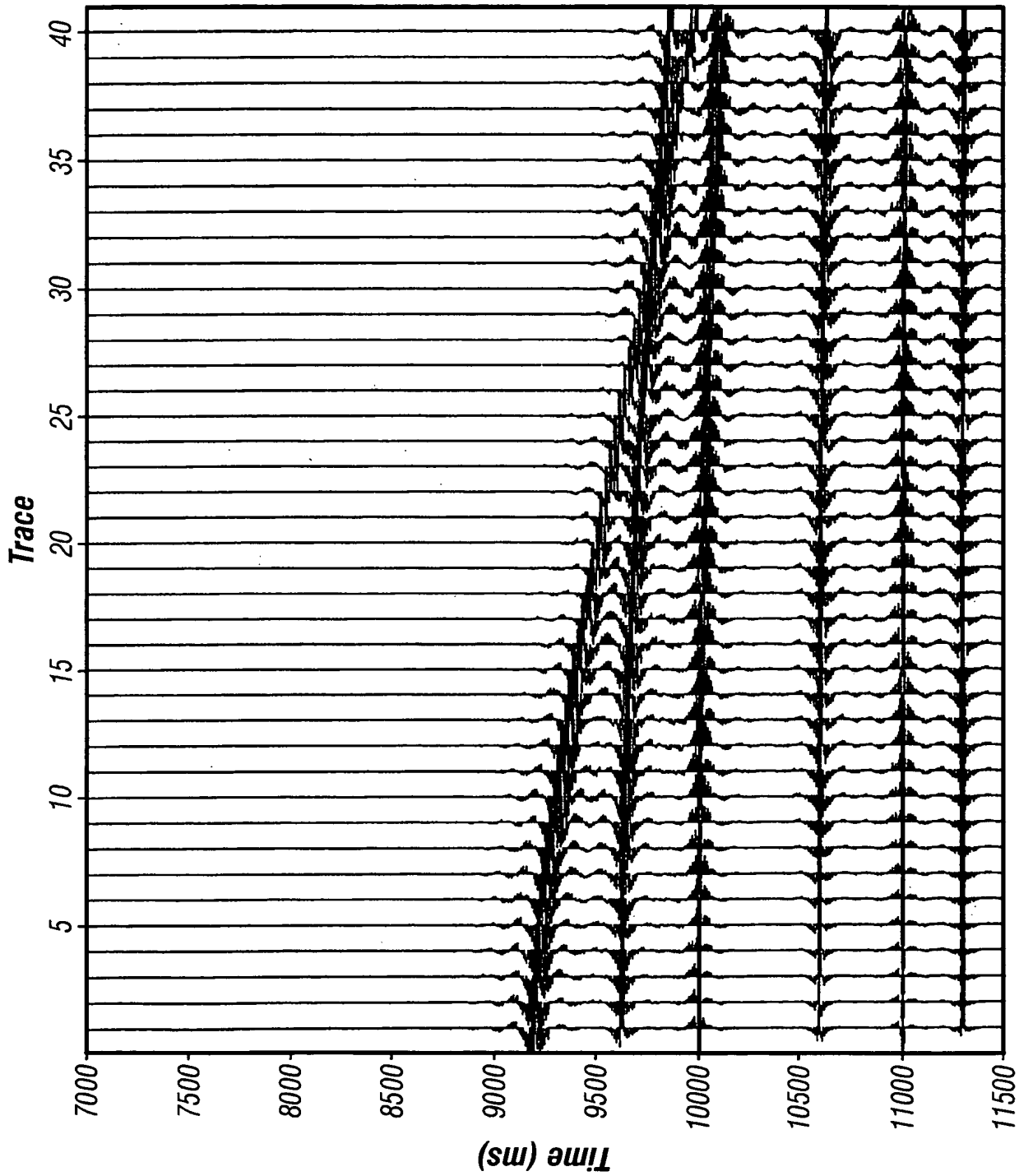
Trace
5
10
15
20
25
30
35
40
7000
7500
8000
8500
9000
9500
10000
10500
11000
11500
Time (ms)

FIG. 4

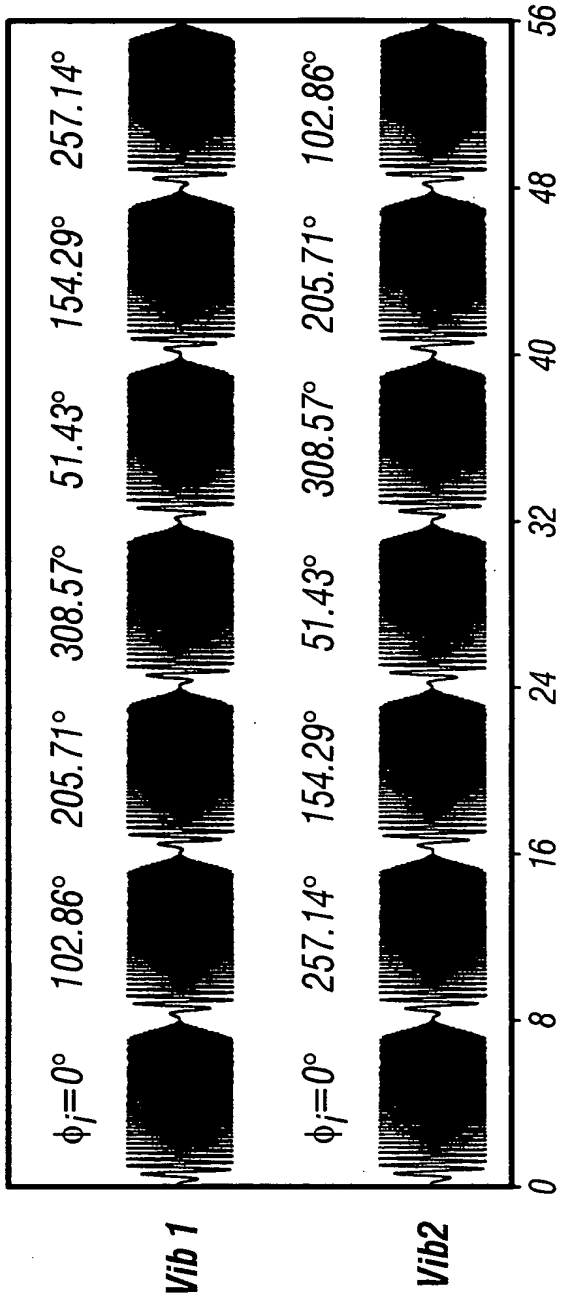
Vib 1
Vib2
ϕ_i=0°
102.86°
205.71°
308.57°
51.43°
154.29°
257.14°
ϕ_i=0°
257.14°
154.29°
51.43°
308.57°
205.71°
102.86°
0
8
16
24
32
40
48
56
Time (sec)

FIG. 5

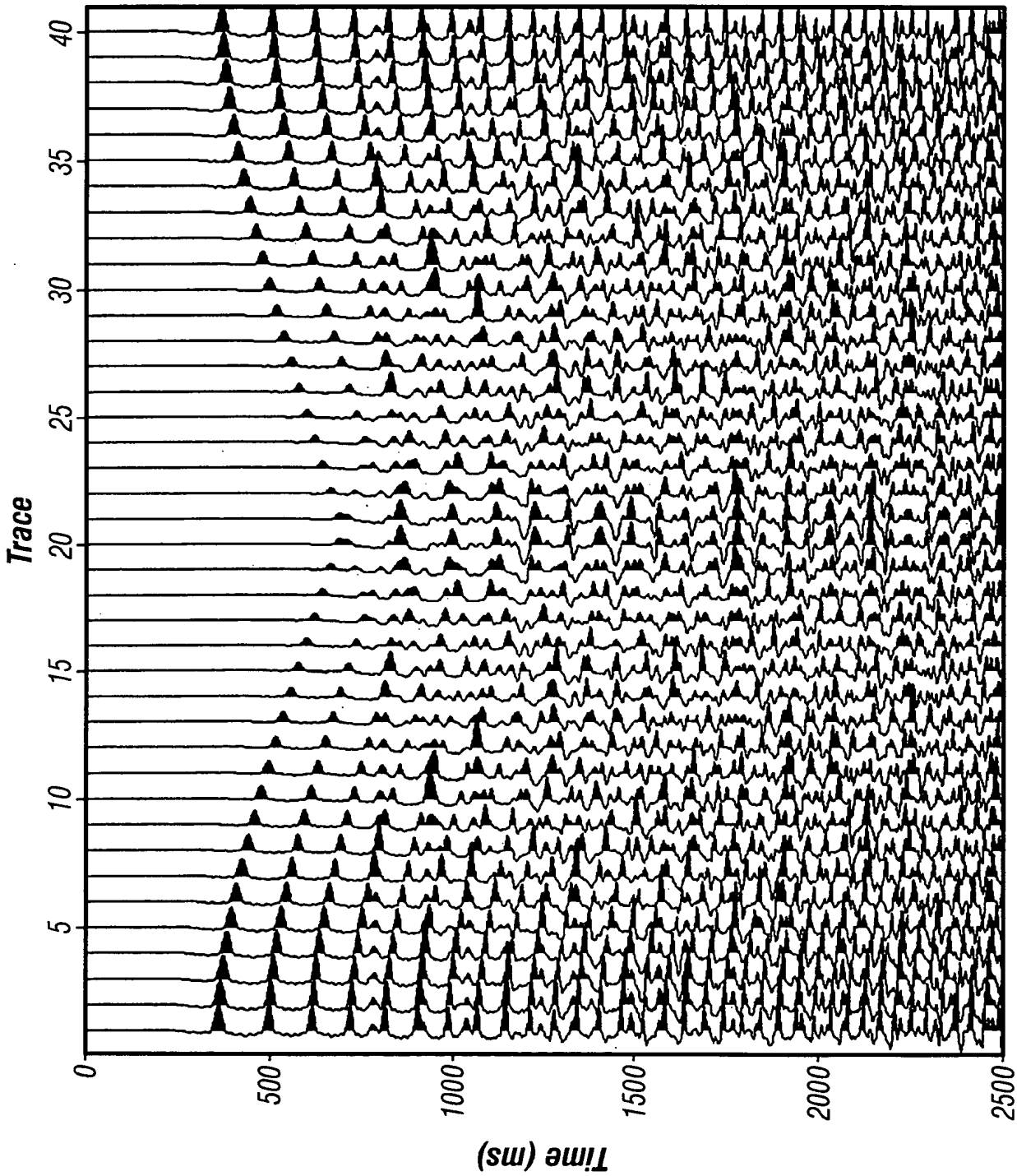

FIG. 6

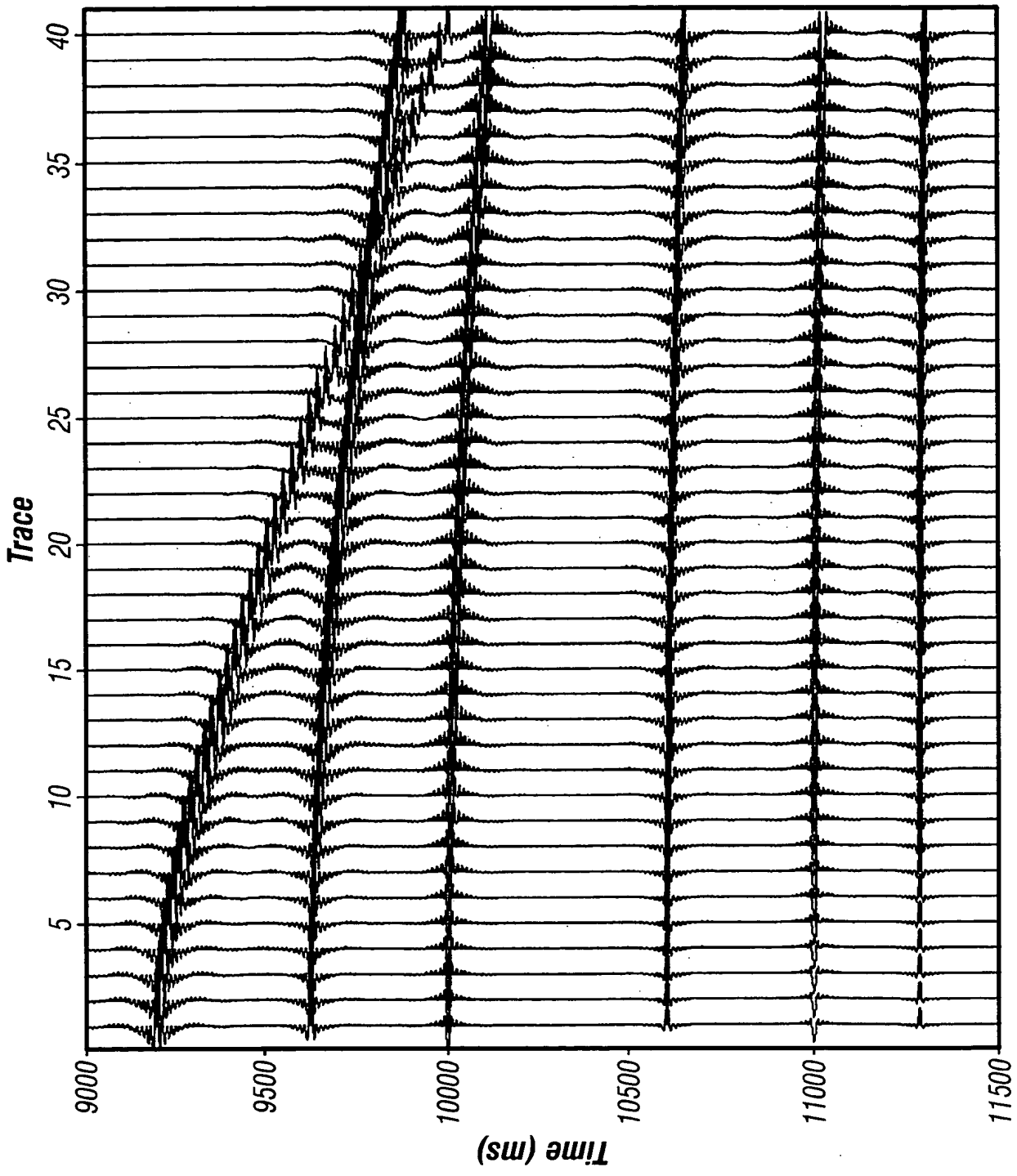
Trace
5
10
15
20
25
30
35
40
9000
9500
10000
10500
11000
11500
Time (ms)

FIG. 7A

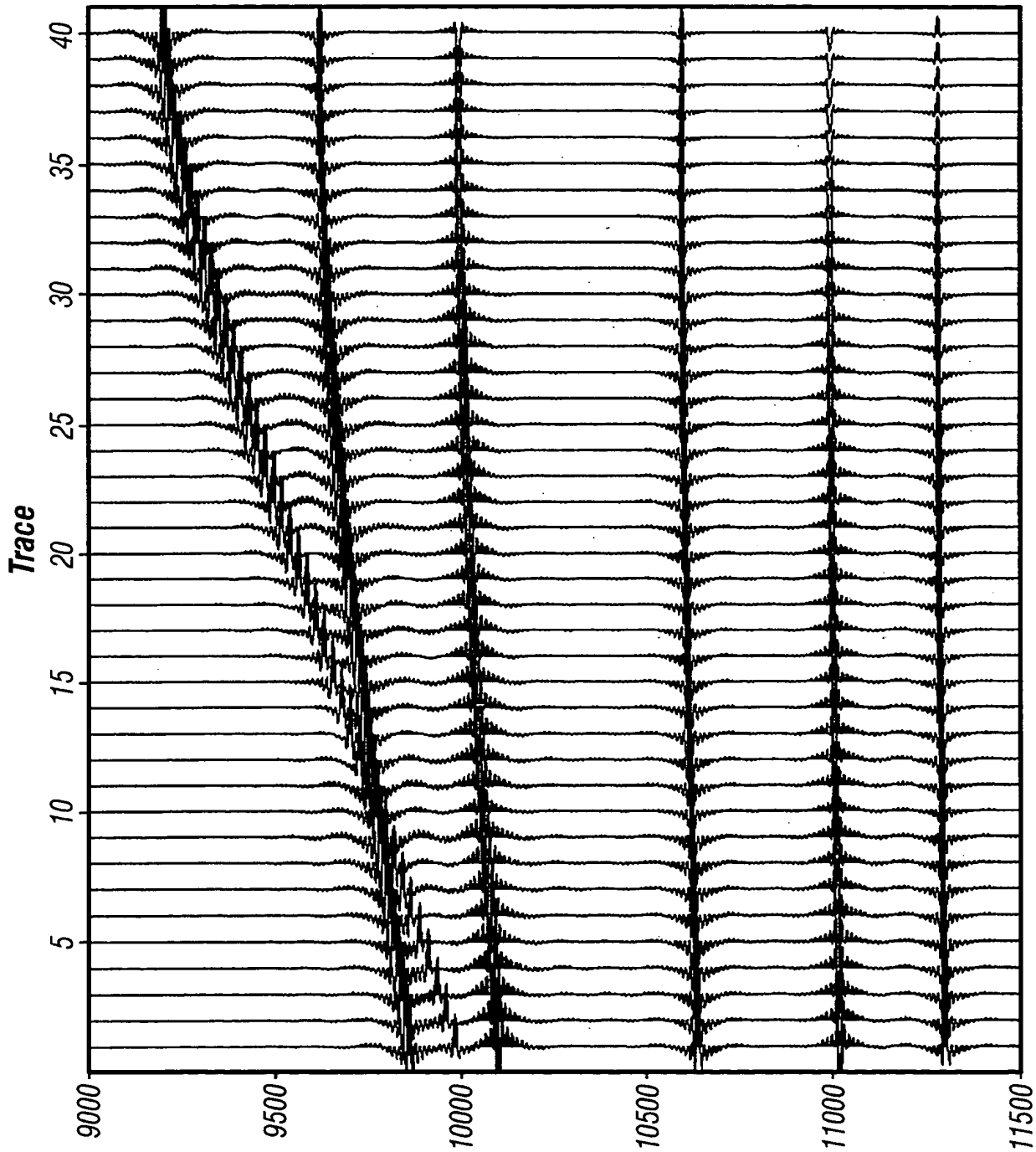
Trace
5
10
15
20
25
30
35
40
9000
9500
10000
10500
11000
11500
Time (ms)

FIG. 7B

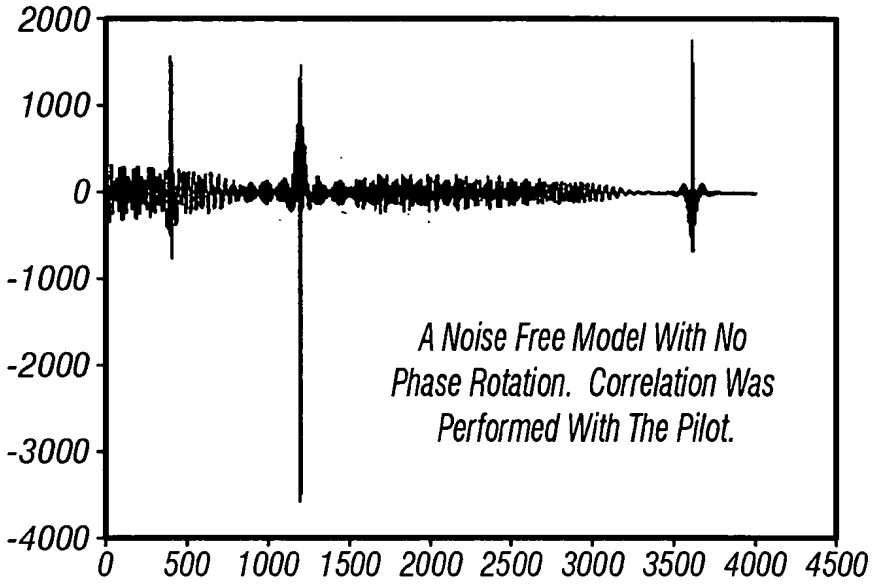
2000
1000
0
-1000
-2000
-3000
-4000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
A Noise Free Model With No Phase Rotation. Correlation Was Performed With The Pilot.

FIG. 8

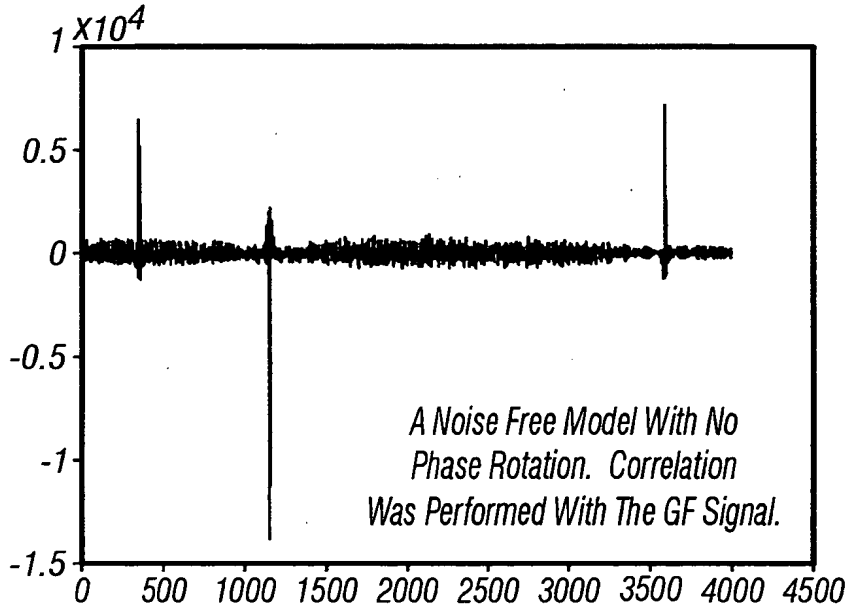
1 X10^4
0.5
0
-0.5
-1
-1.5
0
500
1000
1500
2000
2500
3000
3500
4000
4500
A Noise Free Model With No Phase Rotation. Correlation Was Performed With The GF Signal.

FIG. 9

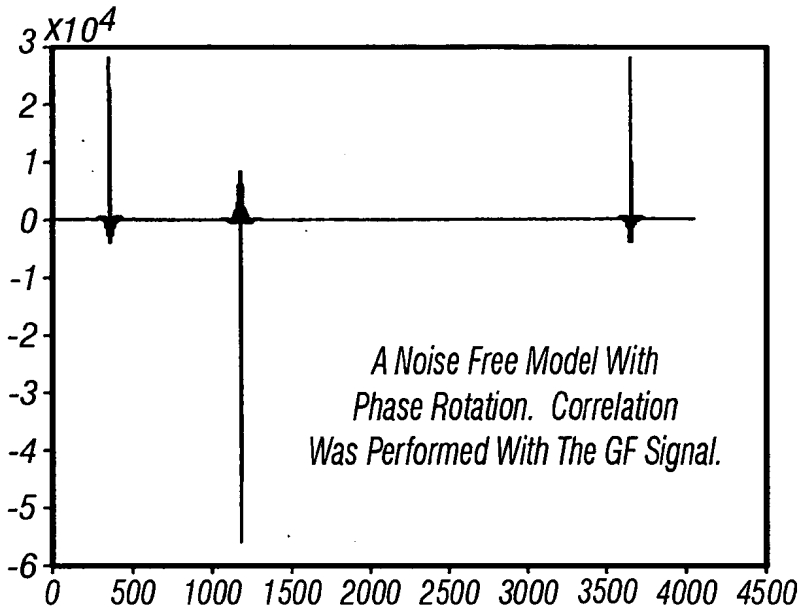
X10^4
3
2
1
0
-1
-2
-3
-4
-5
-6
0
500
1000
1500
2000
2500
3000
3500
4000
4500
A Noise Free Model With
Phase Rotation. Correlation
Was Performed With The GF Signal.

FIG. 10

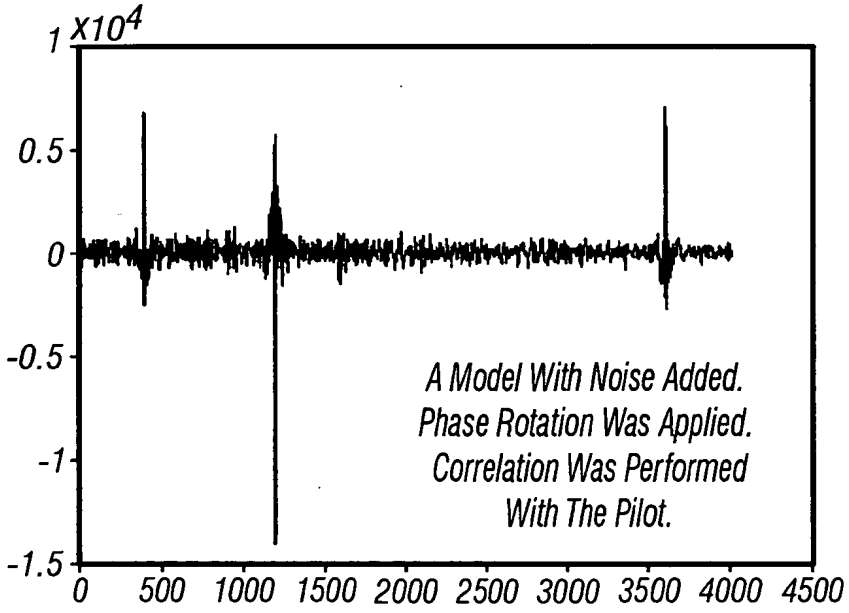
X10^4
1
0.5
0
-0.5
-1
-1.5
0
500
1000
1500
2000
2500
3000
3500
4000
4500
A Model With Noise Added.
Phase Rotation Was Applied.
Correlation Was Performed
With The Pilot.

FIG. 11

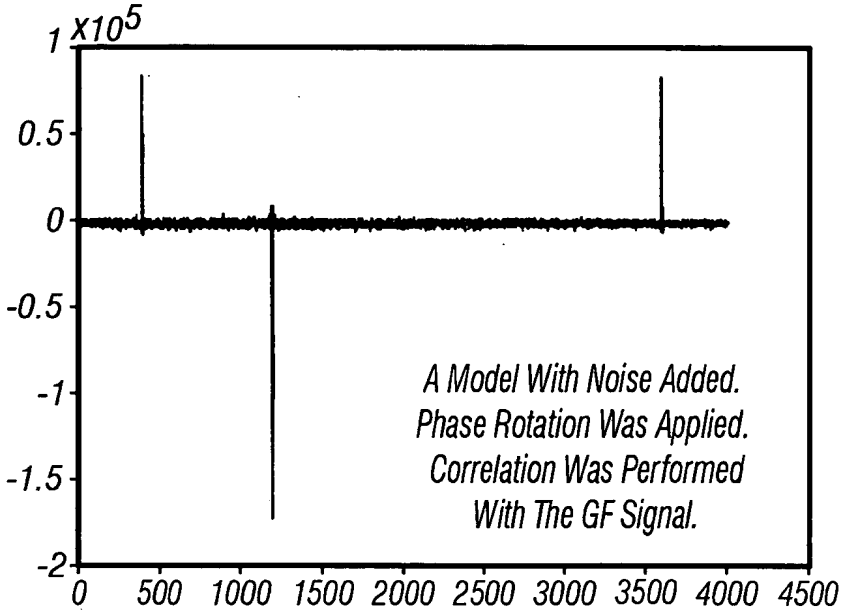
1 X10^5
0.5
0
-0.5
-1
-1.5
-2
0
500
1000
1500
2000
2500
3000
3500
4000
4500
A Model With Noise Added.
Phase Rotation Was Applied.
Correlation Was Performed
With The GF Signal.

FIG. 12

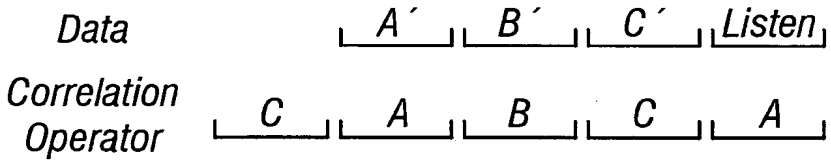
Data
A´
B´
C´
Listen
Correlation Operator
C
A
B
C
A

FIG. 13